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ABSTRACT

This guide was developed to encourage state policy makers and local school boards to implement the national skill standards formulated by the National Institute for Automotive Service Excellence (ASE) and the National Automotive Technician Education Foundation (NATEF) in high schools, technical schools, and technical and community colleges. Implementation of these standards is expected to provide significant improvement in the quality of automotive instruction. The publication recommends six steps for informing employers and the public about the adoption of the Automotive National Skill Standards, and it suggests methods of involving business and industry in the planning process. The steps include: (1) develop a strategic plan to implement the ASE/NATEF Skill Standards; (2) determine the status of implementation; (3) determine the barriers to Skill Standards implementation; (4) inform and involve employers; (5) inform and involve policy makers; and (6) share the strategic implementation plan and benefits of adopting the Standards. Two appendixes provide the following: (1) basic information on the Skill Standards, including descriptions of the ASE, the NATEF, Technical Skill Standards, academic skill and workplace employability standards, and the benefits of ASE/NATEF certification; and (2) information on the school-to-work transition movement. (KC)

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National Institute for Automotive Service Excellence/
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ED 414 410

ASE/NATEF

National Skill Standards Implementation Guide

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Prepared by
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Preface

NATEF and NAVTEF recognize the efforts of the following Advisory Committee members for the development of this ASE/NATEF Implementation Guide. We thank them for their time and their thoughtful comments on the content.

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ASE/NATEF

National Skill Standards Implementation Guide

The Mission

Encourage state policy makers and local boards to implement the ASE/NATEF National Skill Standards in high schools, technical schools, and technical/community colleges.

Introduction

This ASE/NATEF publication provides recommended steps for informing employers and the public about the adoption of Automotive National Skill Standards, and it suggests methods for involving business-industry in the planning process.

The national skill standards referenced in this document are the product of a 36 month national effort, involving representatives of both industry and education. Implementation of these standards is beneficial to the national and local economies, and provides significant improvement in the quality of automotive instruction.

The Process

STEP 1	Develop a strategic plan to implement the ASE/NATEF Skill Standards.
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- The State Director of Vocational-Technical Education should appoint the State Supervisor of Trade and Industrial (T&I) Education to lead this team effort. The team should:
 - ✓ *Include representatives of all levels of education that provide automotive instruction programs.*
 - ✓ *Include representatives from the state associations of automotive dealers and independent repair facilities.*
 - ✓ *Develop a strategic plan that addresses identified strengths, weaknesses, opportunities, and timing to guide the implementation of the standards.*
 - ✓ *Be instrumental in conveying the plan to state and local constituencies.*

STEP 2	Determine the status of implementation.
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- Does the automotive service technician preparation system have a consistent automotive program curriculum?
 - ✓ *Identify the specific changes required in the state curriculum for the program to include ASE/NATEF Skill Standards.*

- ☑ *Modify the state competency/task list to correlate with the ASE/NATEF standards, or adopt the standards at the state level.*

- Identify all ASE Certified Instructors in the system.

- ☑ *They can provide leadership as the implementation cadre.*

- Identify ASE/NATEF Certified Programs and their areas of certification.

- ☑ *They can be models for implementing the standards.*

- Identify and review state legislation that supports school reform, especially the standards section.

- ☑ *Funds from such legislation may be used to implement standards of all types.*

- Identify how ASE/NATEF Certified Programs provide the ability for program completers to attain an industry-transportable skill certificate.

- Identify the program administrators and instructors who are interested in implementing the ASE/NATEF Skill Standards and require help in the process.

- Identify other strengths in the existing automotive technician preparation system.

STEP 3	Determine the barriers to Skill Standards implementation.
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- What weaknesses in the state/local system need to be overcome for standards implementation?
- Is there a consistent expectation of task/competency performance by program completers?
- Is there a consistent expectation for course/program length across the system?
- What perception of quality do state/local automotive industry representatives have of the automotive technician preparation system?
- Can incentives be established at the state level to provide funding for skill standards implementation?
- Is it possible to provide a state-level annual funding premium for programs implementing nationally recognized industry skill standards?

STEP 4	Inform and involve employers.
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- The T&I State Supervisor should identify automotive program advisory committee members at the local level for membership on the implementation team.

- Identify industry partners at the state and local levels that will support improvements in the technician preparation system.
- Implementation team members should meet with supportive employers to inform them of the plan and solicit their help for ASE/NATEF Standards implementation.

STEP 5	Inform and involve the policy-makers.
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- Inform and involve the State Board of Vocational Education and State Board of Education.

☒ *They approve program delivery policies.*

- Inform and involve the Community/Technical College Boards.

☒ *They approve program delivery policies.*

- Inform and involve the policy-level decision makers in the Governor's office and other state agencies.

☒ *Their focus is on enhancing state level economic development.*

- Inform and involve the State Workforce Development Council.

☒ *They will make recommendations and decisions relative to statewide priorities for workforce development funding.*

- Inform and involve technical school, district, and local school boards.

☒ *They approve local program delivery policies.*

- Inform and involve the state School-to-Work administrator.

☒ *He/she will be influential in changing state and local delivery systems.*

STEP 6

Share the strategic implementation plan and benefits of adopting the Standards.

- Meet with the State Board of Vocational Education to demonstrate the benefits of adopting the ASE/NATEF Skill Standards.
- Meet with local school boards to demonstrate the potential improvements in instruction and the local industry support for implementing skill standards.
- Meet with the State School Board and local school boards to demonstrate the academic content. Ask them to endorse appropriate academic credit in mathematics, language arts, and science (physics) for high school automotive programs that implement the Skill Standards.
- Emphasize the fact that automotive service technicians are in a career field that has broad opportunities for employment, and qualified individuals are very well compensated.

- Distribute ASE/NATEF academic content standards during teacher workshops to increase the use of applied learning techniques.
- Inform the Chief State School Officer about the academic and contextual learning benefits of implementing the Skill Standards.
- Demonstrate the role of ASE/NATEF Certified Programs and the contextual learning of academic content in automotive programs, and how this concept is supported in federal policy and legislation including the:



Improving America Schools Act (IASA)

The Goals 2000 Act

The Carl D. Perkins Act

The "Workforce Development" Act

(Perkin's replacement)

The School-to-Work Opportunities Act

The Integrated State Plan Policy

- Demonstrate how funds from these and other federal sources can be used for teacher inservice to support the integration of academic and vocational education, while reinforcing higher order thinking skills and contextual learning in automotive programs.
- Demonstrate how the ASE/NATEF individual and program quality certification model can be applied to other workforce preparation programs in the state.

Appendix A

Basic information on the ASE/NATEF Skill Standards

This ASE/NATEF publication identifies strategies for implementing the ASE/NATEF National Skill Standards at the state or local level. The national trend, as reflected in federal legislation, is to drive decision making to the state and community level.

Emerging national legislation proposes to provide block grants with few mandates that will impact local delivery. This philosophical shift provides a unique opportunity for business and industry to influence the delivery systems. For those in the automotive service industry, this means convincing state and local boards that the need for preparation of skilled automotive service technicians is paramount.

Business and industry must clearly indicate that skilled technicians are not an accident. They result from planned programs. State and local board members must be made aware of the need and be informed that the automotive service industry has a system of planned delivery and national standards that will: 1) improve the quality of automotive training programs, 2) provide students, parents, and employers with a means of evaluating these programs, 3) improve repair services to consumers, and 4) provide youth and adults a means of preparing for well-paid employment.

Local automotive service representatives are a critical element in demonstrating to boards that these sets of Skill Standards for Automotive, Collision Repair and Refinishing (Autobody), and Medium/Heavy Truck technicians are nationally recognized and accepted throughout the industry. When new car dealers or independent repair facility owners need to employ a technician in any one of these fields, they recognize the ASE certification as the benchmark standard. Certified ASE technicians with the ability to diagnose electronics system problems can earn \$60-80,000 a year.

This is a powerful message for school boards, administrators, counselors, parents, teachers and others in the community. Everyone wants students to be involved in programs which will lead to success in careers that provide high income and long term employment prospects. Unfortunately, many believe that the only pathway to this goal is a four-year college degree. This belief must be changed.

Automotive service industry representatives must help boards understand that the ASE/NATEF standards represent more than 20 years of industry validated development. The major challenge will be convincing boards to: 1) accept the need for changes in the local educational delivery system, and 2) embrace a focus, for the majority of students, on preparation for work. (See Appendix B for a Fact Sheet on School-to-Work.)

What is the National Institute for Automotive Service Excellence (ASE)?

In 1972, the major United States automotive manufacturers determined that a technician certification process at the national level would improve the quality of consumer service. After identifying the tasks performed by automotive technicians, a technician testing and certification system was implemented. Today this system is the national standards model.

ASE certifies technicians in the following areas:



Automotive -- 9 areas

- A1 - Engine Repair
- A2 - Automatic Transmission/Transaxle
- A3 - Manual Drive Train and Axles
- A4 - Suspension and Steering
- A5 - Brakes
- A6 - Electrical/Electronic Systems
- A7 - Heating and Air Conditioning
- A8 - Engine Performance
- L1 - Automobile Advanced Engine Performance Specialist



Collision Repair and Refinish (Autobody) -- 4 areas

- B2 - Painting and Refinishing
- B3 - Non-Structural Analysis and Damage Repair
- B4 - Structural Analysis and Damage Repair
- B5 - Mechanical and Electrical Components



Medium/Heavy Truck -- 6 areas

- T1 - Gasoline Engines
- T2 - Diesel Engines
- T3 - Drive Train
- T4 - Brakes
- T5 - Suspension and Steering
- T6 - Electrical/Electronic Systems

Employed technicians can be certified after 1) demonstrating their knowledge through scenario-based tests in their chosen specialty area or areas, and 2) verifying two years of employment in the industry. Completers of a NATEF certified technician preparation program can substitute one year of education for one of employment. (Call NATEF at 703 713-0100 for technician certification information.)

What is the National Automotive Technician Education Foundation (NATEF)?

NATEF is an operational group of ASE that reviews and recommends technician training programs to ASE for certification as quality programs. In 1983, after a multi-year development process sponsored by the domestic automotive industry, the system to certify automotive technician training programs was initiated.

The NATEF process uses a peer and industry review, individual program evaluation and certification model nationwide. Instructional programs designed to provide quality training for Automotive, Collision Repair and Refinish, and Medium/Heavy Truck technicians can be certified by ASE. Programs that meet specified standards in the same specialty areas as technician certification are potential candidates for review and certification. (Call NATEF at 703 713-0100 for technician training program certification information.)

What are the ASE Technical Skill Standards?

The ASE Technical Skill Standards identify the tasks required of competent technicians in each of the specialty areas. These task lists (content standards) are continually validated by industry-based teams, and therefore represent state-of-the-art service procedures. The Skill Standards also include the standards for equipment, facilities, staff and institutional support. Additionally, the academic skill content has been identified through a rigorous process for inclusion in the materials.

In recent years, concerns related to the competitiveness of the U.S. workforce led to federally initiated projects to identify both the technical and related academic skills required of competent technicians. As part of the National Skill Standards development process these standards recently underwent a USDOE sponsored re-validation. (Call NATEF at 703 713-0100 for sample Skill Standards.)

What are the ASE Academic Skill and Workplace Employability Standards?

ASE/NATEF contracted with a leader in the occupational analysis field, the Vocational-Technical Education Consortium of States (V-TECS), to analyze the ASE technical skills and identify the related academic and workplace skills. V-TECS used teams of industry

experts identified by ASE/NATEF, and academic experts to identify and validate the mathematics, physics, electronics, communication, and employability skills required for competent performance of the ASE Skill Standards.

These academic skills are critical to competent performance by quality service technicians. They are also the basis for the integration of academic and vocational education and contextual or applied learning. This is a significant aspect of the Standards, given federal workforce preparation block grants and legislative emphasis on the topic. Documents identifying these academic and employability skills are available from ASE/NATEF for implementation by technician preparation programs, both certified and non-certified. Successful technicians require both the aptitude and academic knowledge essential in automotive technician training programs. An exam is being developed to help candidates assess their ability to succeed in such programs.

What are the benefits of ASE/NATEF Certification?

Recent studies of program certification, along with the observations of industry members on evaluation teams, show that the certification process encourages significant improvements in the quality of a state's Automotive, Collision Repair, and Medium/Heavy Truck training programs. Additionally, students enrolled in Certified Programs do better on statewide automotive skills tests than students who had been enrolled in the same programs prior to ASE/NATEF certification. Students enrolled in ASE Certified Programs have a better placement rate than those in non-certified programs.

Using an eleven year history of Ohio Vocational Education Achievement Test data, both prior to and after automotive training programs became ASE certified, student test results were significantly better after ASE certification, even though student academic abilities remained relatively stable over the eleven year period. In other words, the ASE certification program seems to have been instrumental in significantly improving the preparation of automotive service technicians in Ohio, based upon the research findings. ... Based upon the findings of this most recent research, the process employed by ASE is a means to educational improvement. Widespread use of the ASE model in other segments of public education could be an endowment to future generations throughout America.

Wiblin, J.H. (1993). The Relationship Between Automotive Service Excellence Certification and Ohio Vocational Education Achievement Test Scores.

Appendix B

School-to-Work Transition

- U.S. high schools use most of their resources to prepare students for college.(7)
- Only 15% of incoming high school freshman obtain a four year degree within six years of high school graduation. (1)
- More than 70% of U.S. jobs will not require a four year degree by the year 2000. (2)
- 50% of adults in their late twenties have not found a steady job. (3)
- 75% of America's high school students enter the workforce without four year degrees. (6)
- About 50% of American youth do not go to college. (4)
- About 30% of youth aged 16 - 24 lack the skills for entry-level employment.(5)
- In 1991, approximately 25% of U.S. workers were college graduates, but only 16% reported needing what they learned in college to do their jobs. (6)
- The United States is the only industrialized nation that lacks a comprehensive and coherent system to help its youth ... make an effective transition from school to career-oriented work ...(7)

Sources

- 1) Developed by GAO from U.S. Department of Education, National Center for Education Statistics survey, High School and Beyond: 1980 Cohort (1986 follow-up), and the Center's Digest of Education Statistics (1992 edition), p.49.
- 2) America's Choice: High Skills or Low Wages (National Center on Education and the Economy, P.O. Box 10670, Rochester, NY 14610), p. 3.
- 3) Osterman and Maria Ianozzi, Youth Apprenticeships and School-to-Work Transition: Current Knowledge and Legislative Strategy, Nat'l. Center on Educational Quality of the Workforce (Philadelphia:1993), p.4.
- 4) The Forgotten Half: Pathways to Success for America's Youth and Young Families (The William T. Grant Foundation Commission on Work, Family and Citizenship, 1988), p.4.
- 5) Training Strategies: Preparing Noncollege Youth for Employment in the U.S. and Foreign Countries (GAO/HRD-90-88, May 11, 1990), pp.2-3.
- 6) United States Bureau of the Census, 1991.
- 7) Congressional finding stated in the School-to-Work Opportunities Act of 1993.